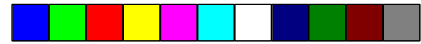


Section III



Cable Assemblies with Interchangeable Connectors (Field Replaceable Connectors)

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Assemblies with Interchangeable Connectors



INTRODUCTION: To ensure accurate testing and optimum system performance, the cable assemblies of test stations are always calibrated with the system. One certain cable set will be used, fitted with certain connectors.

It happens then eventually, that a component would need to be included into the test, showing a different connector configuration. Adding a between-series adapter might be an alternative, but would change the electrical length of the setup. Consequence is then usually to change to different test cables, employing the connectors needed, and calibrating the system again.

Or it occurs that a certain test result is doubted, as it is too bad, or too good. Recalibrating the system and retesting is usually the only alternative.

THE SOLUTION: The answer is the Cable Assembly using Interchangeable Connectors. A Primary Connector Unit is fitted to the cable, accepting those Interchangeable Connector Series. As the Interchangeable Connector Heads have similar electrical performance and are of same electrical length, they can be changed during testing. If the performance of a Connector Head is questionable, it can be exchanged in no time, and the test results can be compared. A cable assembly can be supplied with the Primary Connector Unit, on one, or both ends. In no time the Interchangeable Connectors can be put on, as needed for the application. Basic Connector Units have been developed for the Phase Stable ANA Test Cables of Types 18 and 22, and as well as for a variety of other Test Cables Spectrum Elektrotechnik GmbH is offering, such as the cables of Types 10, 14 17, 100 and 140.

The Interchangeable Connector Heads are available in most popular connector series, such as 7mm, N, SMA and TNC. All these connector heads of the different connector series are of the same electrical length (except the short Nf).

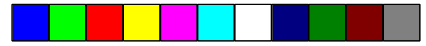
SPECIFYING THE CABLE ASSEMBLY: For your Cable Assembly you need to specify the Type of cable, as listed on page 187 f.f.. You have to decide then about the connector configuration. You may choose to have the Primary Connector Unit terminated on both ends, or you may decide to have the Primary Connector Unit for the Interchangeable Connectors only on one end and a regular connector on the other side. The codes for regular connectors are listed on page 203 f.f..

General ordering information is shown on page 160.

THE CABLE ASSEMBLY KIT: Normally the Cable assembly with Interchangeable Connectors is supplied in an instrument case, as a Standard Kit, or the Professional Kit. It contains also a number of Interchangeable Connectors and a torque wrench. Additional empty spots can be filled with connector heads on separate order, as needed in the individual application.

CUSTOM PRODUCTS: Spectrum Elektrotechnik GmbH is a very innovative company. Our engineers are constantly designing new products, or modifying existing products to customers' requests. Therefore catalogs never will be complete. If you do not find exactly what you need in our catalogs, please contact our sales or engineering department.





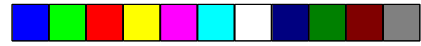
Assemblies with Interchangeable Connectors



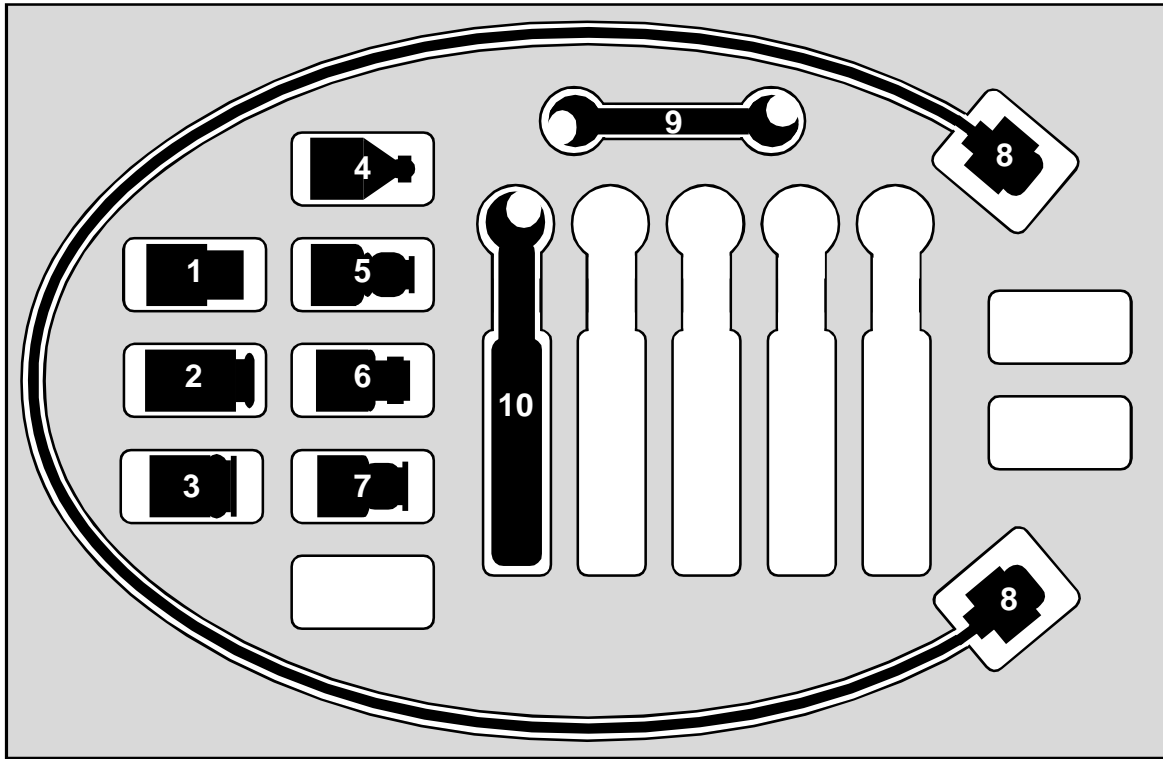
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Spectrum Elektrotechnik GmbH P.O. Box 45 05 33, 80905 Munich, Germany Tel. (89) 354 804-0, Fax (89) 354 804-90 (Country Code: 49)





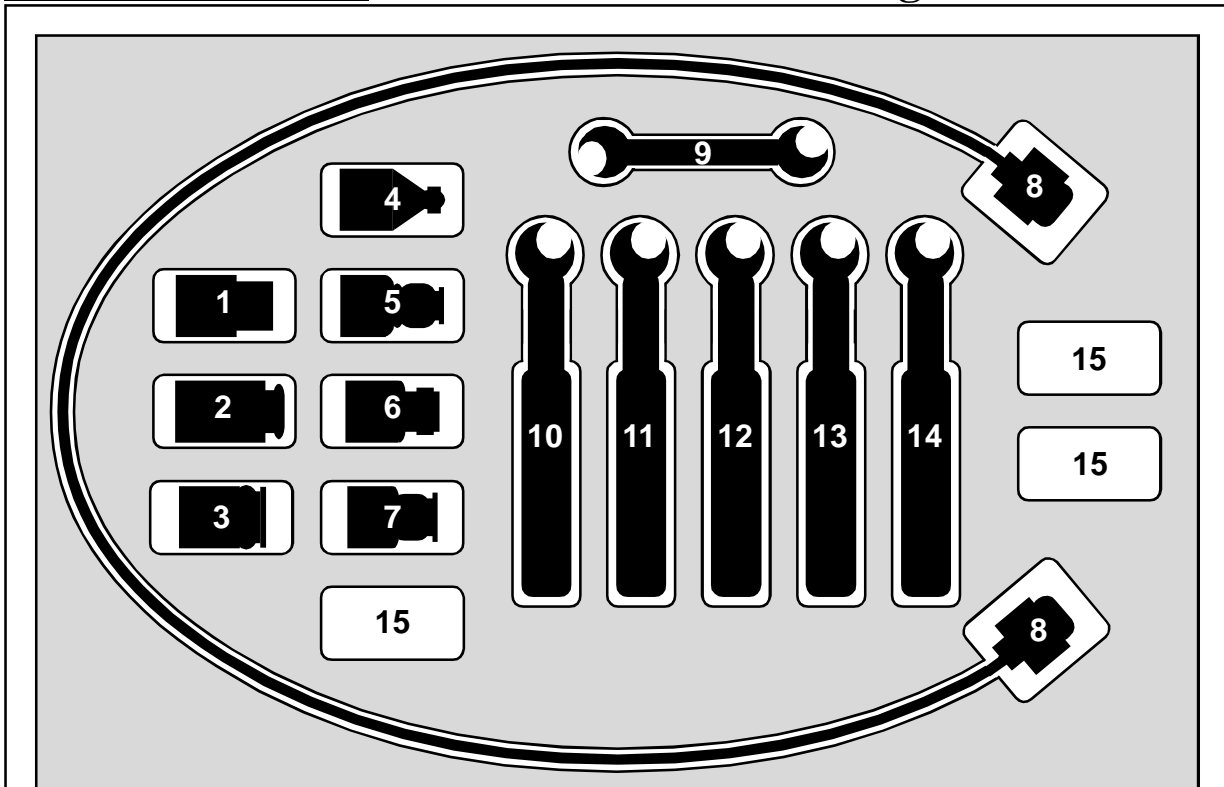
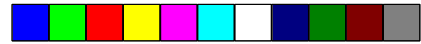
Assemblies with Interchangeable Connectors



Cable Assembly Kit using Interchangeable Connectors.

Description of Equipment Provided		Standard Kit	
1:	Interchangeable Connector 7mm P/N 9015-E110-02	7:	Interchangeable Connector TNC m P/N 4015-E110-02
2:	Interchangeable Connector N f P/N 3015-E210-02	8:	2 Pcs. Primary Connector supplied with the Cable Assembly
3:	Interchangeable Connector N m P/N 3015-E110-02	9:	Double Ended Wrench
4:	Interchangeable Connector SMA f P/N 2015-E210-02	10:	Torque Wrench for Interchangeable Connectors Size: 9/16", P/N: WE - DE01
5:	Interchangeable Connector SMA m Maxi Nut P/N 2015-E110-02		Instrument case
6:	Interchangeable Connector TNC f P/N 4015-E210-02		



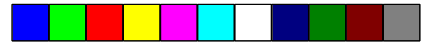


Cable Assembly Kit using Interchangeable Connectors.

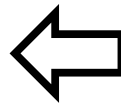
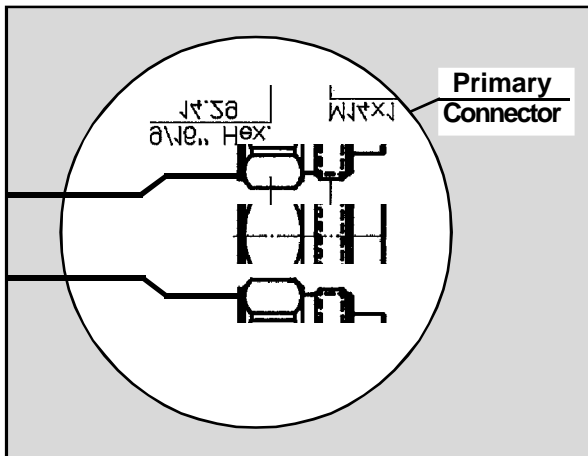
Description of Equipment Provided	Professional Kit
1: Interchangeable Connector 7mm P/N 9015-E110-02	10: Torque Wrench for Interchangeable Connectors Size: 9/16", P/N: WE - DE01
2: Interchangeable Connector N f P/N 3015-E210-02	11: Torque Wrench for 7mm Size: 3/4", P/N: WE - D107
3: Interchangeable Connector N m P/N 3015-E110-02	12: Torque Wrench for N Size: 3/4", P/N: WE - D105
4: Interchangeable Connector SMA f P/N 2015-E210-02	13: Torque Wrench for SMA w/Maxi Nut Size: 9/16", P/N: WE - D103
5: Interchangeable Connector SMA m Maxi Nut P/N 2015-E110-02	14: Torque Wrench for TNC Size: 9/16", P/N: WE - D102
6: Interchangeable Connector TNC f P/N 4015-E210-02	15: Optional Additional Interchangeable Connectors
7: Interchangeable Connector TNC m P/N 4015-E110-02	Instrument case
8: 2 Pcs. Primary Connector supplied with the Cable Assembly	
9: Double Ended Wrench	

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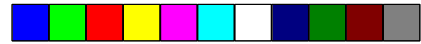
Assemblies with Interchangeable Connectors



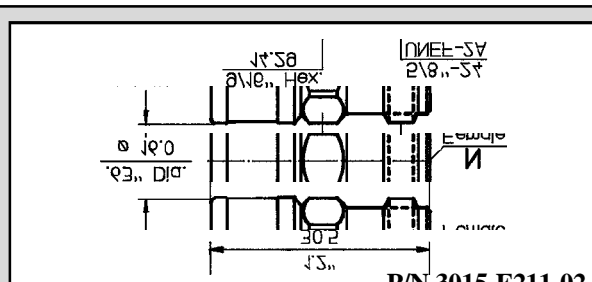
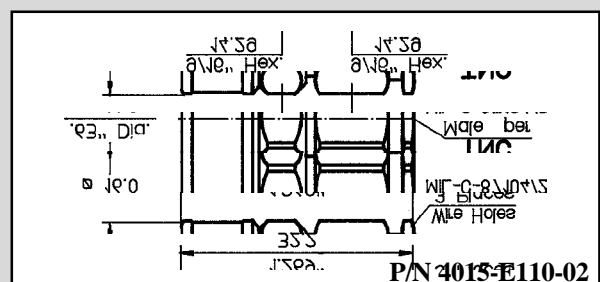
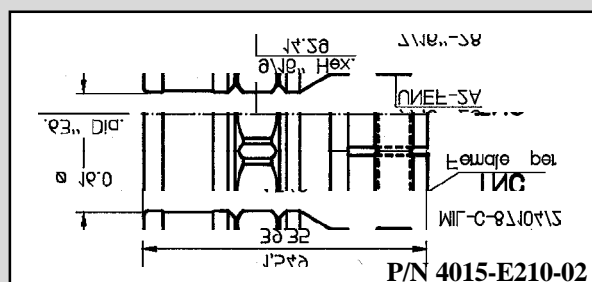
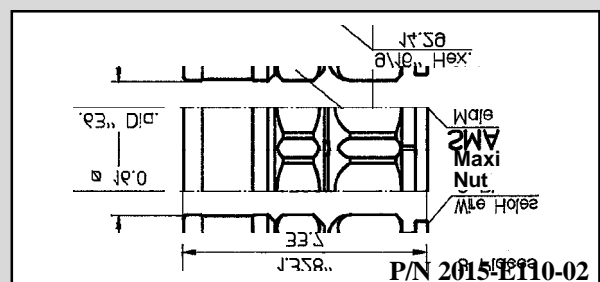
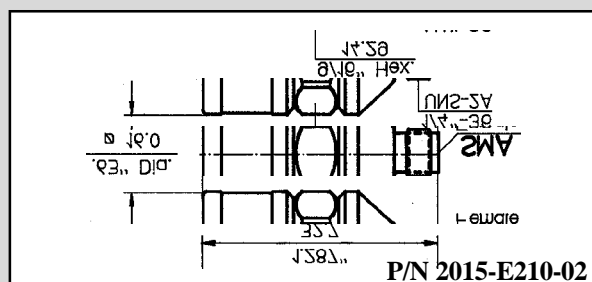
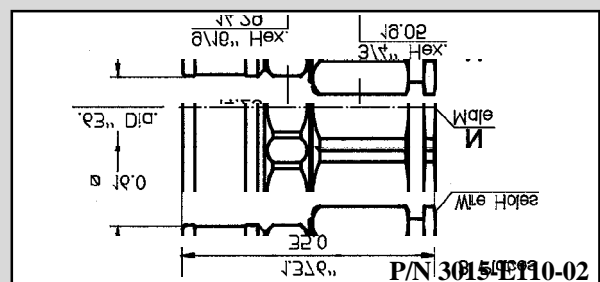
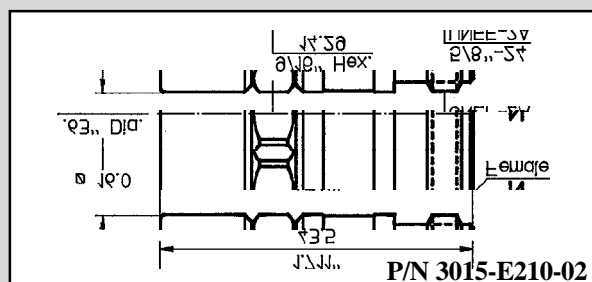
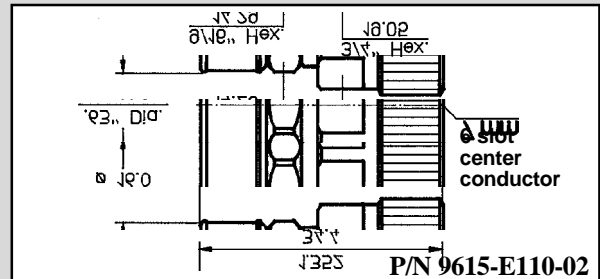
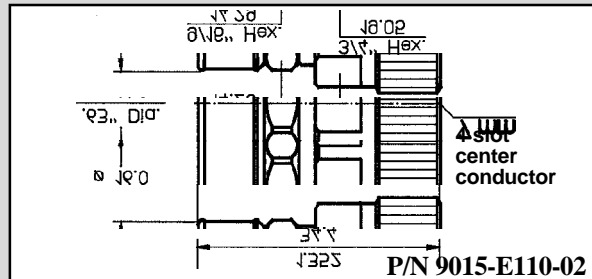
**Primary Connector Unit
for Interchangeable
Connector Series
as supplied with the
cable assembly.**

Type	Sex	Description	Remarks	Connector of equal Electrical Length	Code	Part Number	Finish
7mm	--	straight	4 equally spaced Contact slots	YES	E90	9015-E110-02	passivated Stainless Steel
			6 equally spaced Contact slots	YES	E96	9615-E110-02	
N	Male	straight		YES	E51	3015-E110-02	passivated Stainless Steel
	Female			YES	E61	3015-E210-02	
				Short version	NO	E62	
SMA	Male	straight	Maxi-Nut	YES	E11	2015-E110-02	passivated Stainless Steel
	Female			YES	E21	2015-E210-02	
TNC	Male	straight		YES	E31	4015-E110-02	passivated Stainless Steel
	Female			YES	E41	4015-E210-02	





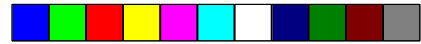
Interchangeable Connectors of Identical Electrical Lengths



**N female straight
Short Version**

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Interchangeable Assembly Kit **Ordering Information**



INFORMATION ON HOW TO ORDER AN INTERCHANGEABLE CONNECTOR ASSEMBLY KIT:

Spectrum Elektrotechnik GmbH has set up an easy to use part number system. The customer can compose his part number, describing completely the kit he is ordering. The table below explains the system and describes the possible alternatives.

THE KIT: Normally the Cable assembly with Interchangeable Connectors is supplied in an instrument case, as a Standard Kit, or the Professional Kit. It contains also a number of Interchangeable Connectors, and a torque wrench. Additional empty spots can be filled with connector heads on separate order, as needed in the individual application. The letter **T** identifies the type of Kit being ordered. Replacing **T** by **S** means ordering the Standard Kit, **P** stands for the Professional Kit, **C** is used when a custom compiled Kit is ordered.

THE CABLE: The three letters **ABC** are used to identify the cable by its code. The cable code does not necessarily have to be of three digits, it also can be two digits only.

THE ARMORING: For strenuous applications or harsh environment, armoring of the cable may be needed. A variety of armors are available as standard, as outlined in "The '97 Handbook Cable Assemblies". The Customer may replace the **D** in the part number with the code for the armour requested, or he may rely on Spectrums suggestions by replacing the **D** with a temporary code 'A'. Spectrum will then change that temporary code 'A' with the appropriate code, describing the armor recommended. For no armour, a 'Blank' will be used.

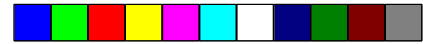
THE LENGTH: The letters **EFGH** are describing the length of the cable in millimeters, from reference plane to reference plane of the connectors. For lengths longer than 9999mm (10m), three digits with a leading 'd' are used to identify the length in decimeters (dm).

Example: for a cable length of 30 meters the length code will be 'd300'.

THE CONNECTORS: Both ends of the assembly will be terminated with the Primary Unit, as necessary to connect with the Interchangeable Connector Heads. The Interchangeable Connector Heads are available in most popular connector series, such as 7mm, N, SMA and TNC. All these connector heads of the different connector series are of the same electrical length (exception: the short Nf).

R	T	-	A	B	C	D	-	E	F	G	H
<p>T: to be replaced with one of the following letters for the option required.</p> <p>S = Standard Kit P = Professional Kit C = Custom Kit</p>		<p>ABC: to be replaced with the following two or three digit numbers respectively, for the Cable required.</p> <p>Cable Code</p> <p>10 = Cable Type 10 14 = Cable Type 14 18 = Cable Type 18 22 = Cable Type 22 40 = Cable Type 40 42 = Cable Type 42 100 = Cable Type 100 140 = Cable Type 140</p> <p>For details on the cables, please refer to Section VII.1, pages 187 - 198.</p>				<p>D: to be replaced in the part number with the code for the armor requested, or rely on Spectrums' suggestions by replacing the 'D' with an 'A'. Spectrum will then change the temporary code 'A' with the appropriate code.</p>		<p>EFGH: to be replaced with the length of the cable. Measurements are taken from the reference plane of one connector to the opposite one.</p>			





Spectrum Elektrotechnik GmbH **Ordering Information Assemblies with Interchangeable Connectors**

INFORMATION ON HOW TO ORDER INTERCHANGEABLE CONNECTOR ASSEMBLIES:

The customer may order only an assembly, instead of ordering the whole Kit with interchangeable connectors. The table below explains the system and describes the possible alternatives for composing the part number of the cable assembly.

THE CABLE: The three letters **ABC** are used to identify the cable by its code. The cable code does not necessarily have to be of three digits, it also can be two digits only.

THE ARMORING: For strenuous applications or harsh environment, armoring of the cable may be needed. A variety of armors are available as standard, as outlined in "The '97 Handbook Cable Assemblies". The Customer may replace the **D** in the part number with the code for the armor requested, or he may rely on Spectrum's suggestions by replacing the **D** with a temporary code **'A'**. Spectrum will then change that temporary code **'A'** with the appropriate code, describing the armor recommended. For no armor, a **'Blank'** will be used.

THE LENGTH: The letters **EFGH** are describing the length of the cable in millimeters, from reference plane to reference plane of the connectors. For lengths longer than 9999mm (10m), three digits with a leading **'d'** are used to identify the length in decimeters (dm).

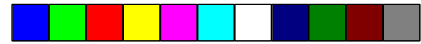
Example: For a cable length of 30 meters the length code will be **'d300'**.

THE CONNECTORS: The letters **PU** stand for **'Primary Unit'**. They identify that one end of the cable assembly is terminated with the Primary Connector Unit, as necessary to connect with the Interchangeable Connector Heads. The letters **MNO** are to be replaced with the two or three digit code, identifying the connector configuration at the other end of the cable assembly. This end may be terminated with a standard connector. For that connector code, please refer to pages 205 f.f. If this end of the cable assembly is supposed to be supplied with a Push-On Connector, locking or non-locking, please refer to pages 163 f.f. If a Primary Unit for Interchangeable connectors is required, then replace **MNO** simply by **PU**.

A	B	C	D	-	E	F	G	H	-	P	U	-	M	N	O
<p>ABC: to be replaced with the following two or three digit numbers respectively, for the Cable required.</p> <p>Cable Code 10 = Cable Type 10 14 = Cable Type 14 18 = Cable Type 18 22 = Cable Type 22 40 = Cable Type 40 42 = Cable Type 42 100 = Cable Type 100 140 = Cable Type 140 For details on the cables, please refer to Section VII.1, pages 187 - 198.</p>			<p>D: to be replaced in the part number with the code for the armor requested, or rely on Spectrums' suggestions by replacing the 'D' with an 'A'. Spectrum will then change the temporary code 'A' with the appropriate code.</p>		<p>EFGH: to be replaced with the length of the cable. Measurements are taken from the reference plane of one connector to the opposite one.</p>				<p>PU: Primary Unit for Interchangeable Connector Series.</p>			<p>MNO: for the standard Connector configuration, please fill in the two or three number/letter Code, describing the Connector. Please refer to pages 203 - 206.</p> <p>If Push-On Connector is required here as well, please use Codes on pages 166-167.</p>			

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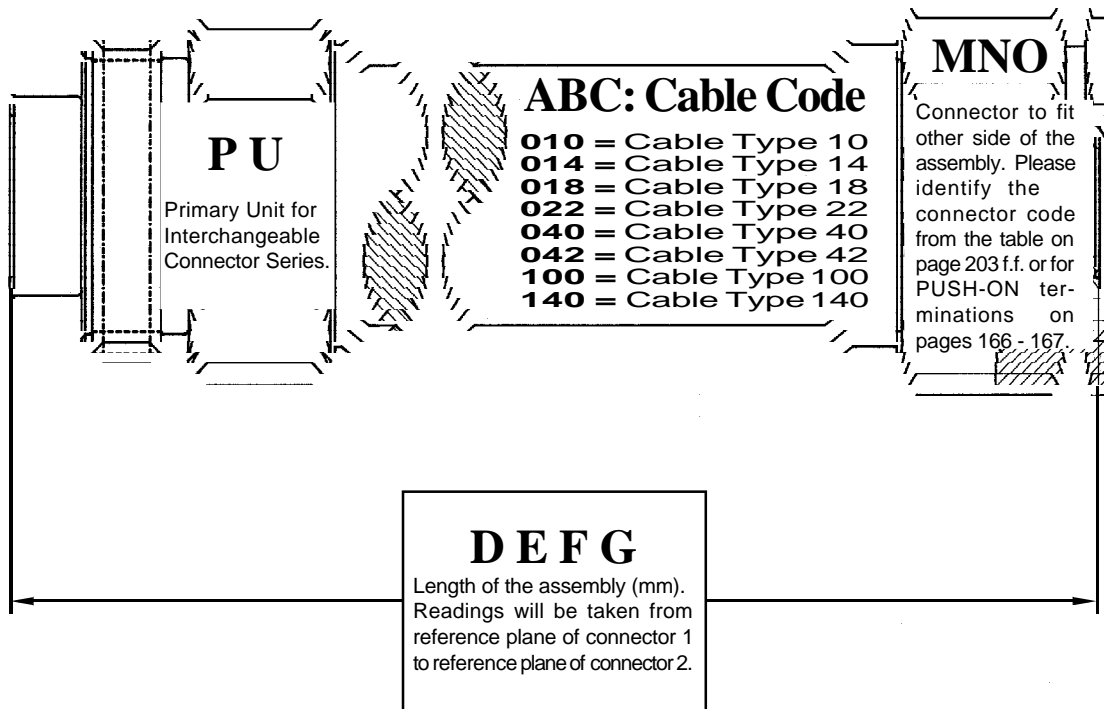




Ordering Details:

The Part Number Sequence is:

ABCD-EFGH-PU-MNO



Please refer to page 161 for further explanations on the part number sequence.

For cable assemblies, made to customer specification, or complying to special requirements, the company will issue a special part number.

Ordering Example: The cable assembly of Type '22' shall have the length of 75 cm (length is measured from interface to interface). It shall be terminated with a Primary Unit and an N male connector (code from page 205).

ABC = cable code = 22 - DEFG = length in mm = 0750 - PU and LMN are the connectors = PU and 61.

Part Number for the cable assembly in this example: 22 - 0750 - PU - 61.

